

Growth conditions and production of the *Bacillus intermedius* subtilisin-like serine proteinase by the recombinant *Bacillus subtilis* strain

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Abstract

The effect of the components of the nutrient medium on growth and production of the *Bacillus intermedius* subtilisin-like serine proteinase by the recombinant strain *Bacillus subtilis* AJ73(pCS9) was studied. The production of proteinase was found to be dependent on the composition of the nutrient medium and showed two peaks, at the 28th and 48th h of growth. The concentrations of the main components of the nutrient medium (peptone and inorganic phosphate) optimal for the biosynthesis of subtilisin-like serine proteinase at the 28th and 48th h of growth were determined in factorial experiments. Complex organic substances, casein at concentrations of 0.5-1%, gelatin at concentrations of 0.5-1%, and yeast extract at a concentration of 0.5%, stimulated the production of subtilisin-like serine proteinase by the recombinant strain. The study of the sporulation dynamics in this strain showed that the proteinase peaks at the 28th and 48th h of growth correspond, respectively, to the initial stage of sporulation and to the terminal stages of endospore formation (V-VII stages of sporulation). © Pleiades Publishing, Inc., 2006.

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Keywords

Bacillus intermedius, Biosynthesis, Extracellular subtilisin-like serine proteinase, Recombinant strain, Sporulation